

Hafler
the standard

m5

OWNER'S MANUAL

5¼" Reference Monitor



Introduction

Thank you and congratulations on your purchase of the HAFLER M5 monitor, the world's finest brand in professional audio equipment.

The M5 Monitor is a compact (5.3liter) vented 2-way nearfield passive loudspeaker offering unmatched quality and performance in a truly professional grade product. The low profile of the M5 and lack of obtrusive or reflective grille details enables it to project a well focused and reflection free natural soundstage in small console, workstation or meter-bridge applications.

Although the M5 Monitor is a passive model it has the technical circuitry and features that ensure excellent sound quality in every application. Crossover design is a 24dB/octave Linkwitz Riley that filters high frequencies to the tweeter and low frequencies to the woofer. The circuit also incorporates optical protection for "overload" protection and a 0dB/-3dB tweeter pad to match the tweeter level to the midrange for the best balance in sound.

Combine the M5 Enclosure with the technical features and you'll see the HAFLER M5 Monitor certainly reflects a great success for Hafler in achieving a reliable reference level of performance in a compact and portable package at an affordable cost.

Although we realize a professional such as yourself already knows a thing or two about pro audio, we urge you to read this manual to at least humor our technical writer. For ease of use, this manual is organized into two main sections: Performance Specifications and Installation. "Performance Specifications" covers technical information useful for technicians and engineers. "Installation" covers the set-up of your new HAFLER equipment in the system.

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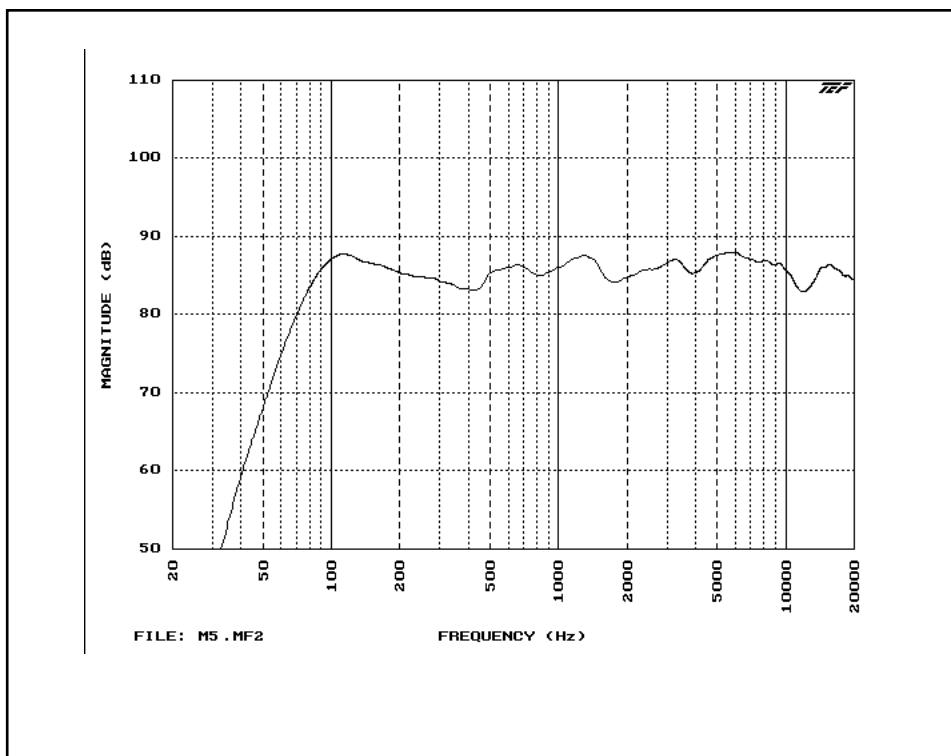
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Technical Specifications

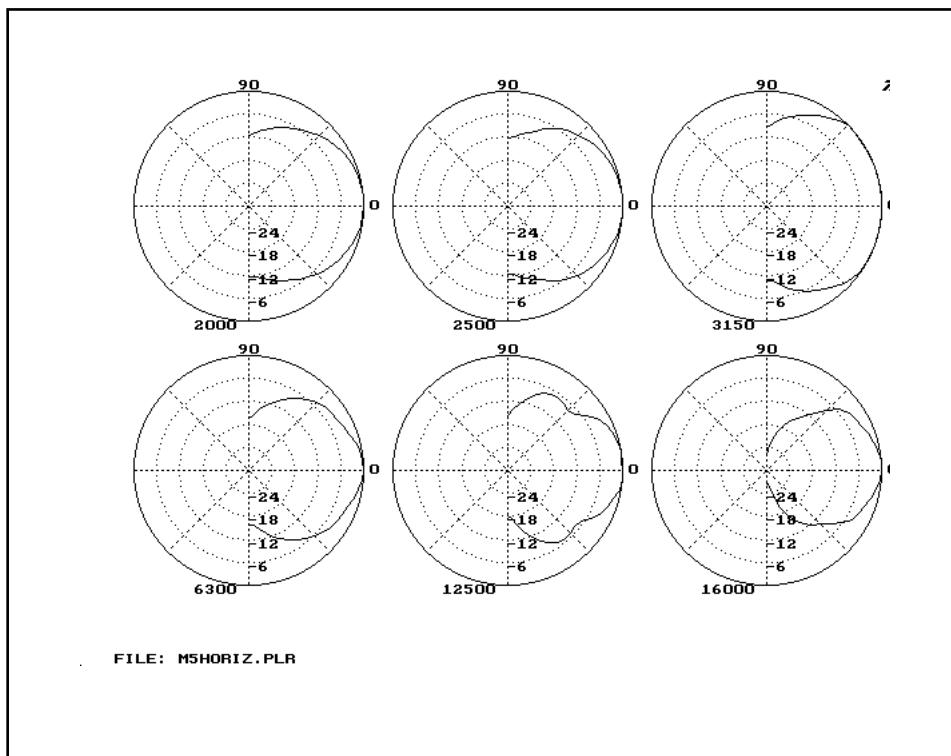
Free Field Frequency Response	70Hz-21kHz, +\/-3db
Peak Acoustic Output	$\geq 110\text{dB}$ (per pair w/music @ 1m)
Total Harmonic Distortion	(THD) <3%, 70Hz-150Hz <1%, >150Hz at 90db @1m on axis
High Frequency Driver	1" (25mm) Silk Dome
Low Frequency Driver	5 1/4" (133mm) Polypropylene Cone Nitrile Rubber Surround Full Magnetic Shielding
Cabinet	0.19 cu.ft (5.3 liters) Black Textured Vinyl on 5/8" MDF Front Firing Vent
Power Rating	20-200 Watts Program
Sensitivity	>89dB (w/2.83 vrms @ 1m)
Nominal Impedance	6Ω
Crossover	4th Order Linkwitz-Riley at 3.2kHz Woofer Mid-Frequency Notch Filter Woofer High Frequency Zobel Optical Tweeter Protection User Selectable -3dB L-Pad
Input	Gold 5-way Inputs
Dimensions	6 3/4" W x 12 3/16" H x 7" D
Net Weight	10 lbs. (25kg)

Specifications are subject to change without notice.

Performance Specifications

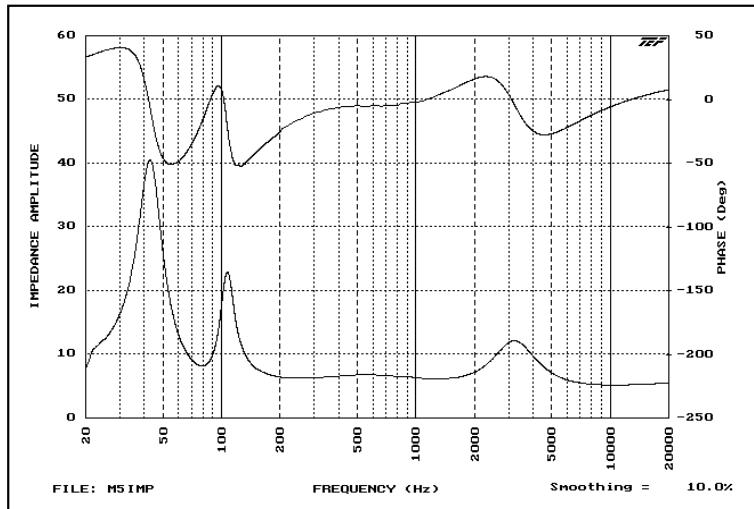


Frequency Response @ 1m on axis

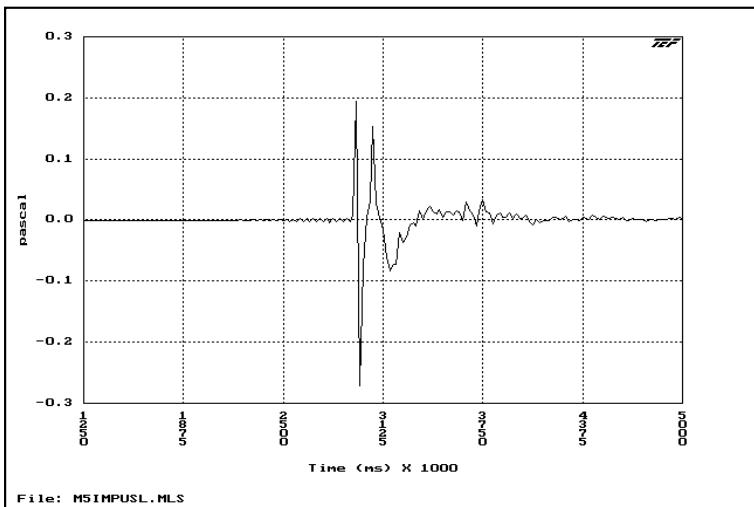


Horizontal Polar Response

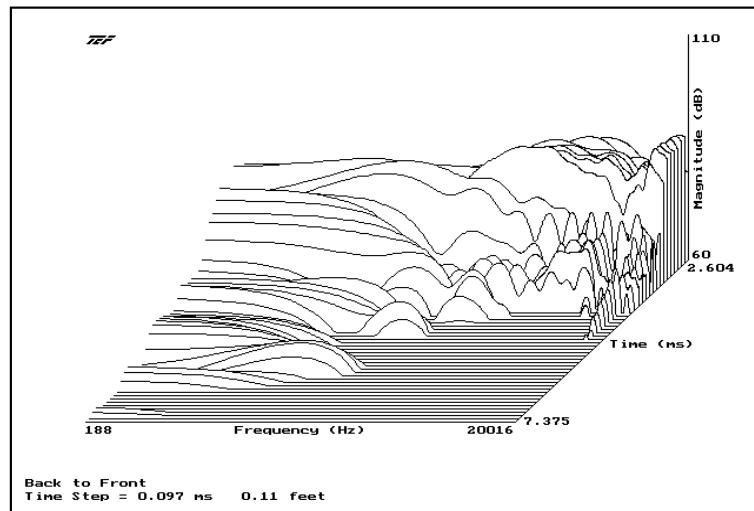
Performance Specifications



Impedance Graph



Impulse Graph



Cumulative Spectral Decay Plot

Design Features

The M5 enclosure is a textured black vinyl clad $5\frac{1}{8}$ " thick MDF cabinet with an internal volume of 5.3 liters and a front firing slotted port tuning the system to 70Hz. The low frequency character of the M5 follows a classic 4th order Butterworth vented alignment with smooth response extending down well below system tuning. Small panel size and strategically placed internal bracing reduces wall flexing and mid-band resonance. High cabinet rigidity also improves low frequency mid-bass coupling.

The M5 tweeter uses a proprietary 25mm silk dome and exponential horn waveguide combination. The 133mm ($5\frac{1}{4}$ ") M5 mid-bass driver is a custom designed and manufactured speaker specific to this new Hafler monitor. This woofer uses a polypropylene cone with a nitrile rubber edge for fast, efficient low frequency damping and uniform piston control. The cone's polypropylene material is mineral loaded and adds the required stiffness to maintain a smooth response character well past the system's crossover point. The increased cone rigidity also helps minimize inter-modulation distortion (IMD) components. IMD at normal playback levels is not just an audible distraction it's a contributor to listening fatigue.

The linear characteristic of the multi-rolled flat spider and the nitrile rubber edge also ensures low levels of harmonic distortion (THD). High magnetic linearity is achieved by using a long 32mm ($1\frac{1}{4}$ ") diameter voice coil set in a computer optimized magnet structure. The 4.2 lb magnet assembly is completely shielded for use near video monitors or other CRT devices. The M5 mid-bass driver is carefully designed and constructed to be both thermally and mechanically capable of handling the 200-watt system power rating.

Installation

LOCATION

The location of your reference monitors in addition to the acoustics of the listening room will influence the system frequency response. In the near field environment, our ears are more sensitive to direct sound rather than the reverberation of sound. Below are some recommendations for the initial set-up which may help you optimize performance in complex acoustic environments. ***In any configuration, keep the rear of the monitor at least 5" (12.7cm) away from any wall or obstruction to reduce excessive boundary "loading" of the woofer vent.***

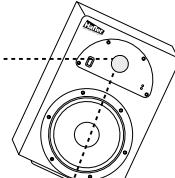
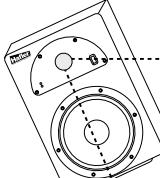
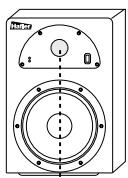
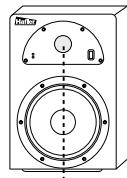


Fig. 1

INADEQUATE
Off-Axis Response

Fig. 2

OPTIMUM
On-Axis Response

Aiming the monitors directly forward (Fig. 1) may cause response problems resulting in inadequate stereo imaging. Aiming the monitors toward you and spaced equally like a triangle (Fig. 2) provides the best imaging and produces the flattest frequency response.

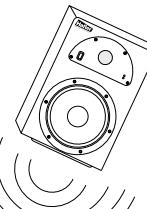
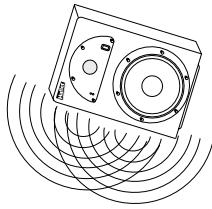
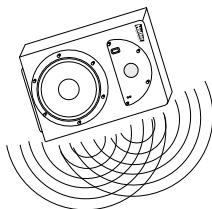


Fig. 3

INADEQUATE
Horizontal Alignment

Fig. 4

OPTIMUM
Vertical Alignment

If you frequently move your chair from *side to side* in front of your mixing console, positioning the tweeter and woofer in horizontal alignment (Fig. 3) can create complex lobing patterns. Minimizing this effect can be achieved by placing the tweeter and woofer in vertical alignment (Fig. 4). If it is essential to position the monitors horizontally, place them with the tweeters toward the inside.

Service Policy and Limited Warranty

Rockford Corporation (Hafler Division) offers a limited warranty on Hafler products on the following terms:

•Length of Warranty

1 year on Monitors

•What is Covered

This warranty applies only to products sold to the original owner and is non-transferable. This warranty only applies to units sold in the continental United States. You are required to have a copy of the receipt stating the customer's name, dealer name, product purchased and date of purchase.

•Products found to be defective during the warranty period will be repaired or replaced (with product deemed to be equivalent) at Hafler's discretion.

•What is NOT Covered

1. Damage caused by accident, abuse, improper operations, water, theft
2. Service performed by anyone other than Hafler or an Authorized Hafler service center
3. Any product purchased outside the United States (please contact your local dealer)
4. Shipping charges to get the unit to Hafler
5. Any product which has had the serial number defaced, altered, or removed

•Limit on Implied Warranties

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Hafler any other liability in connection with the sale of the product.

•How to obtain service or technical support

Please call 1-800-669-9899 for Rockford/Hafler support. You must obtain an RA # (return authorization number) to return any products to Hafler. You are responsible for shipment of product to Hafler.

**Rockford Corporation
Hafler Division
2055 E. 5th Street
Tempe, Arizona 85281**

NOTICE - IMPORTANT SAFETY INFORMATION



**WARNING: TO PREVENT FIRE OR SHOCK HAZARD
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.**

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read Instructions

All the safety and operating instructions of your Hafler equipment should be read before power is applied to the equipment.

2. Retain Owner's Manual

These safety and operating instructions should be retained for future reference.

3. HEED WARNINGS

All warnings on the equipment and in the operating instructions are important and should be followed.

4. FOLLOW INSTRUCTIONS

All operating and use instructions are important and should be followed.

5. HEAT

The equipment should be kept away from areas of high temperature, i.e., heater vents, radiators, stoves/ovens, fireplaces, etc.

6. VENTILATION

The equipment should be used in an area suitable for proper ventilation. Care should be taken not to impede airflow in and around the cabinet.

7. WATER AND MOISTURE

The equipment should not be used in or around water, such as a bathtub, sink, or swimming area. Also, the equipment should not be used in areas prone to flooding, such as a basement.

8. CLEANING

The equipment should be cleaned only as detailed in the operating instructions.

9. OBJECT AND LIQUID ENTRY

Care should be taken so that objects and/or liquids, such as cleaning fluids or beverages, are not spilled into the enclosure of the equipment.

10. DAMAGE REQUIRING SERVICE

Hafler equipment should be serviced by qualified service personnel when:

- A. Objects have fallen onto, or liquid has been spilled into the equipment, or
- B. The equipment has been exposed to rain, or
- C. The equipment does not appear to operate normally or exhibits a marked change in performance, or
- D. The equipment has been dropped, or the enclosure has been damaged.

11. SERVICING

The user should not attempt to service the equipment beyond that which is described in the operating instructions. All other service should be referred to qualified service personnel.

12. CARTS AND STANDS

The equipment should be used with carts or stands only of sufficient strength and stability for the use intended.

An equipment and cart combination should be moved with care. Quick stops and starts, excessive force, and uneven surfaces may cause the equipment and cart combination to topple.

ADVERTENCIA – INFORMACION DE SEGURIDAD IMPORTANTE



PRECAUCIONES:

Para Prevenir el incendio o la descarga electrica, no exponer este equipo a la lluvia o a la humedad

El símbolo de flecha relámpago dentro de un triángulo equilátero, es para alertar al usuario de la presencia de "voltajes peligrosos" no aislados en el interior del aparato, los cuales pueden ser de suficiente magnitud para constituir un riesgo de choque eléctrico a las personas.

El símbolo de exclamación dentro de un triángulo equilátero, es para alertar al usuario de la presencia de instrucciones importantes de operación y mantenimiento (servicio) en la documentación que acompaña al equipo.

1.LEA LAS INSTRUCCIONES

Todas las instrucciones de seguridad y operación de su equipo Hafler, deben ser leídas antes de que el equipo sea conectado eléctricamente.

2.CONSERVE EL MANUAL DEL PROPIETARIO

Estas instrucciones de seguridad y operación, deben ser conservadas para futuras referencias.

3.CUADROS DE ADVERTENCIAS

Todas las advertencias en el equipo y en las instrucciones de operación, son importantes y deben ser seguidas.

4.SIGA LAS INSTRUCCIONES

Todas las instrucciones de uso y operación son importantes y deben ser seguidas.

5.CALOR

El equipo debe ser mantenido lejos de áreas de alta temperatura, como por ejemplo: ventilaciones de calentadores, radiadores, estufas/hornos, hogueras, etc.

6.VENTILACION

El equip debe ser usado en áreas con ventilación adecuada. Deben ser tomadas las precauciones necesarias para no impedir el flujo de aire dentro y alrededor del aparato.

7.AGUA Y HUMEDAD

El equipo no debe ser usado en el agua ó alrededor de ésta, tales como en una bañera, tanque o áreas de nado. También, el equipo no debe ser usado en áreas propensas a inundaciones, tales como en un sótano.

8.LIMPIEZA

El equip debe ser limpiado solo en la forma que se detalla en las instrucciones de operación.

9.INTRODUCCIÓN DE OBJETOS Y LIQUIDO

Deben ser tomadas precauciones con el fin de que objetos y/o líquidos, tales como fluidos de limpieza y gaseosas, no sean derramados dentro del chassis del aparato.

10.DAÑOS QUE REQUIEREN DE SERVICIO

Los equipos Hafler deben ser llevados a servicio por personal calificado cuando:

A.Objetos ó líquido hayan sido introducidos ó derramado en el equipo, ó

B.El equipo haya sido expuesto a lluvia, ó

C.El equipo aparenta no operar normalmente ó exhibe un marcado cambio en su desempeño, ó

E.El equipo se ha caído, o el chassis ha sido golpeado.

11.SERVICIO

El usuario no deberá intentar darle servicio al equipo más allá de lo que está descrito en el instructivo de operación. Todo lo demás, deberá ser referido a servicio por personal calificado.

12.CARRETILLAS Y SOPORTES

El equipo podrá ser usado con carretillas y soportes que tengan la fortaleza y estabilidad suficiente para el uso previsto.

La combinación equipo/carretilla deberá ser movida con cuidado. Rápidas paradas y arranques, excesiva fuerza y superficies imparadas, pueden causar el volcamiento del conjunto de carretilla/equipo.

ATTENTION: INFORMATIONS IMPORTANTES DE SÉCURITÉ



AVERTISSEMENT:

Afin de prévenir les risques de feu ou de choc, ne pas exposer cet appareil à la pluie ou à l'humidité

1. LIRE LES INSTRUCTIONS

Le mode d'emploi et les mesures de sécurité de votre équipement Hafler devraient être consultés avant sa mise en marche.

2. CONSERVER LE GUIDE DE L'UTILISATEUR

Le mode d'emploi et les mesures de sécurité devraient être conservés pour des références futures.

3. CONSIDÉRATIONS DE MISE EN GARDE

Le mode d'emploi et les mises en garde concernant cet équipement sont de grande importance et devraient être suivis.

4. SUIVRE LE MODE D'EMPLOI

Le mode d'emploi et les conseils d'utilisation sont importants et devraient être suivis.

5. CHALEUR

Le matériel devrait être préservé loin de toute source de chaleur: radiateurs, cuisinière/fours, cheminées,...etc.

6. VENTILATION

Le matériel devrait être utilisé dans un endroit à bonne ventilation. Il reste nécessaire de respecter la circulation de flux d'air à l'intérieur et autour du meuble.

7. EAU ET HUMIDITÉ

Le matériel ne devrait pas être utilisé près d'une source d'eau, telle qu'une baignoire, un évier, ou une aire de baignade. De plus, le matériel ne devrait pas être utilisé dans des lieux sujets aux inondations, tels que les sous-sols.

8. NETTOYAGE

Le matériel devrait être nettoyé en respectant les instructions indiquées.

La lumière clignotante du symbole de la flèche à l'intérieur d'un triangle équilatéral, à pour objet d'alerter l'utilisateur de la présence "d'un voltage dangereux" non-isolé à l'intérieur du produit, qui pourrait être de magnitude suffisante au risque d'électrocution.

Le point d'exclamation, à l'intérieur d'un triangle équilatéral, à pour objet de prévenir l'utilisateur de l'importance des instructions de fonctionnement et de maintenance, jointes à l'appareil.

9. PENETRATION DES LIQUIDES

Un attention particulière est exigée quant à la dispersion de liquides tels que les produits de nettoyage et boissons, de façon à éviter toute pénétration dans l'enceinte du matériel.

10. DÉGÂT NÉCESSITANT UNE RÉVISION

Le matériel Hafler devrait être révisé par des personnes qualifiées de service après-vente, lorsque:

A. De objets sont tombés sur le matériel, ou des liquides s'y sont dispersés, ou:

B. Le matériel a été exposé à la pluie, ou:

C. Le matériel ne semble pas fonctionner correctement, ou affiche un changement de performance, ou:

D. Le matériel a été renversé à terre, ou l'enceinte a été endommagée.

11. REVISION

L'utilisateur ne devrait pas essayer de réviser le matériel en allant plus loin que ce qui a été décrit dans le mode d'emploi. Toute autre révision devrait être confiée à un personnel qualifié.

12. CHARIOTS ET MEUBLES

Le matériel devrait être utilisé avec des chariots et meubles de qualité et stabilité suffisante à son utilisation préconçue.

L'ensemble du matériel et du chariot devrait être déplacé avec précaution. Des mises en marche et arrêts brusques, des collisions excessives ainsi que des surfaces inégales peuvent renverser l'ensemble du matériel et du chariot.

ACHTUNG – WICHTIGE SICHERHEITS – INFORMATIONEN



WARNUNG:
Um die Gefahr eines elektroschocks oder feuer zu vermeiden, setzen sie das Gerät keinem regen oder extremer feuchtigkeit aus.

1. INSTRUKTIONEN LESEN

Alle Sicherheits- und Operationshinweise Ihres Hafler Equipments sollten vor der Inbetriebnahme gelesen werden.

2. BETRIEBSANLEITUNG AUFBEWAHREN

Bewahren Sie die Bedienungsanleitung sorgfältig auf, damit Sie in dieser auch in Zukunft nachschlagen können.

3. WARNUNGEN BEACHTEN

Alle Warnungen des Gerätes und der Bedienungsanleitung sind extrem wichtig und müssen befolgt werden.

4. INSTRUKTIONEN BEACHTEN

Alle Operations- und Gebrauchshinweise sind extrem wichtig und müssen beachtet werden.

5. HITZE

Das Equipment sollte fern von Hitze ausstrahlenden Geräten aufgestellt werden, wie z.B. Heizungen, Öfen etc.

6. VENTILATION

Das Equipment sollte so aufgestellt werden, daß eine ausreichende Ventilation gewährlebt wird.

7. WASSER UND FEUCHTIGKEIT

Das Equipment sollte nicht im oder in der Nähe von Wasser benutzt werden, wie z.B. in Schwimmbädern, Saunen etc. Es sollte ebenfalls nicht in Überschwemmungsgefährdeten Gebieten aufgestellt werden, wie z.B. Kellerräumen.

8. REINIGEN

Reinigen Sie das Gerät nur, wie in der Bedienungsanleitung detailliert beschrieben.

Der Blitz mit dem Pfeil, in einem gleichschenkligen Dreieck, soll den Benutzer vor unisoliertem „gefährlicher Spannung“ innerhalb des Gerätes warnen.

Das Ausrufezeichen, in einem gleichschenkligen Dreieck, soll den Benutzer darauf aufmerksam machen, daß dem Gerät wichtige Operations - und Service - Informationen beigefügt sind.

9. EINDRINGEN VON FREMDKÖRPERN

Achten Sie darauf, daß weder Fremdkörper, noch Flüssigkeiten in das Gerät eindringen.

10. ERFORDERLICHER REPARATURSERVICE

Hafler Equipment sollte nur von qualifizierten Service-Technikern instand gesetzt werden, wenn:

A. Eine Flüssigkeit in das Gerät eingedrungen ist

B. Das Gerät Regen ausgesetzt wurde

C. Das Gerät nicht mehr ordnungsgemäß funktioniert, ggf. nicht mehr die volle Leistung abgibt

D. Das Gerät runtergefallen ist oder das Gehäuse beschädigt wurde

11. SERVICE

Der Benutzer sollte nur den Service ausführen, der in der Bedienungsanleitung für den Benutzer freigegeben wird. Den weiterführenden Service sollte nur von qualifizierten Technikern durchgeführt werden.

12. AUFSTELLUNG

Das Equipment sollte so aufgestellt werden, daß der gewählte Untergrund die erforderliche Stabilität aufweist, so daß eine gefahrlose Nutzung gewährleistet wird.

Das Equipment und der Untergrund sollte mit äußerster Vorsicht bewegt werden. Bei schnellen Bewegungen oder starkem Abbremsen, kann es zum Umkippen des Equipments kommen.

NOTARE – IMPORTANTI INFORMAZIONI SULLA SICUREZZA



ATTENZIONE:
Per prevenire incendio scariche elettriche, non esporre
questo apparato a pioggia o umidità.

Il simbolo del fulmine in un triangolo equilatero vuole avvertire della presenza di tensioni elevate non isolate e di valore sufficiente per costituire rischio di shock elettrico alle persone.

Il punto esclamativo contentuto in un triangolo equilatero vuole avvertire l'utente della presenza di parti di servizio e di manutenzione che sono dettagliate nel manuale di istruzioni.

1.LEGGETE LE ISTRUZIONI

Tutte le istruzioni riguardanti la sicurezza ed il funzionamento devono essere lette prima di applicare tensione all'apparato.

2.CONSERVATE IL MANUALE

Queste istruzioni riguardanti la sicurezza ed il funzionamento devono essere conservate come riferimento futuro.

3.AVVERTENZE

Tutte le avvertenze poste sull'apparato e sul libretto di istruzioni sono importanti e devono essere seguite.

4.SEGUIRE LE ISTRUZIONI

Tutte le istruzioni operative e di funzionamento devono essere seguite.

5.TEMPERATURA

L'apparato deve essere mantenuto lontano da tutte le zone ad alta temperatura, termosifoni, termoconvettori, stufe e forni, caminetti ed altro.

6.VENTILAZIONE

L'apparato deve essere posizionato in aree convenienti per una corretta ventilazione. Prestare attenzione che sia consentita circolazione d'aria attorno e dentro il cabinet.

7.ACQUA E POLVERE

L'apparato deve essere posizionato lontano da zone contenenti acqua, come vasche a bagno, acquari e piscine. Inoltre non deve essere impiegato in aree soggette ad allagamento, come le cantine.

8.PULIZIA

L'apparato deve essere pulito solo come indicato dalle istruzioni.

9.INGRESSO DI OGGETTI E LIQUIDI

Si deve prestare attenzione che oggetti e liquidi, come fluidi detergenti e bibite, non vengano versati all'interno dell'apparato.

10.RIPARAZIONI

Gli apparati Hafler devono essere riparati da personale qualificato quando:

A.Oggetti sono caduti all'interno del telaio o quando del liquido è entrato

B.Quando l'apparato è stato esposto a pioggia

C.Quando l'apparato non sembra funzionare normalmente o quando esibisce un cambiamento di prestazioni o

D.Quando è caduto o il telaio è stato danneggiato

11.ASSISTENZA

L'utente non deve tentare di prestare assistenza all'apparato, se non per quanto espresso nelle istruzioni. Tutti gli altri interventi devono essere effettuati da un tecnico specializzato.

12.CARRELLI E STAND

L'apparato deve essere impiegato su carrelli o stand solo se questi sono sufficientemente solidi e stabili per la funzione a cui si vuole dedicarli.

La combinazione di carrello ed apparato deve essere mossa con cautela. Fermate e partenze improvvise, forze eccessive e superfici irregolari, possono ribaltare la combinazione carrello e apparato.

Notes



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A DIVISION OF
ROCKFORD CORPORATION
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TEMPE, ARIZONA 85281 U.S.A.
1-888-HAFLER1 / 480-967-3565
WWW.HAFLER.COM

MADE IN THE USA

This product is designed, developed and assembled in the USA by a dedicated group of American workers. The majority of the components used in the construction of this product are produced by American companies. However, due to the global nature of their manufacturing facilities and the electronics parts industry in general, some parts may be manufactured in other countries.